## **Author Index**

Abdelghany, A E. Feed efficiency, nutrient retention and body composition of Nile tilapia. *Oreochromis niloticus* L., fed diets containing L-ascorbic acid, L-ascorbyl-2sulphate or L-ascorbyl-2-polyphosphate, 503

Al-Ahmed, A A see Ridha, M T

Al-Ameeri, A A see Ridha, M T

Aldridge, C. Book review: Handbook of Trout and Salmon Diseases, 457

Al-Hafedh, Y S & Siddiqui, A Q. Evaluation of guar seed as a protein source in Nile tilapia, Oreochromis niloticus (L.), practical diets. 703

Al-Hafedh, Y S see Siddiqui, A Q

Ali, S A see Siddiqui, A Q

Al-Thobaiti, S A see James, C M

Álvarez, M C see Martinez-Rodríguez, G

An, H P see De Silva, S S

Ansal, M D & Kaur, K. Relative efficacy of dietary administration of 3,5,3'-triiodothyronine (T<sub>3</sub>) to different stages of an Indian major carp, Cirrhina mrigala (Hamilton): growth and economics, 835

Antolín, J I see Pérez. J R

Arakawa, O see Khan, S.

Arakawa, O see Ono, K

Arulampalam, P, Yusoff, F M, Shariff, M, Law, A T & Srinivasa Rao, P S. Water quality and bacterial populations in a tropical marine cage culture farm, 617

Atkinson, J L see Moccia, R D

Audet, C see Roche-Mayzaud, O

Awaïss, A & Kestemont, P. Feeding sequences (rotifer and dry diet), survival, growth and biochemical composition of African catfish, Clarias gariepinus Burchell (Pisces: Claridae), larvae, 731

Babiak, I, Glogowski, J, Luczynski, M, Goryczko, K, Dobosz, S & Kuzminski, H. The effect of individual male potency on fertilization ability of fresh and cryopreserved milt of rainbow trout, Oncorhynchus mukiss (Walbaum), 337

Bai. S C see Lee. K-I

Baiano, J C F see Burford, M A

Baker, R T M see Morris, P C

Basu, T K, Bhattacharyya, B, Sarkar, S K, Ganguly, S & Medda, C. Autoregressive technique in length growth modelling of two Indian major carp, Catla catla (Hamilton) and Labeo rohita (Hamilton), reared under two holding conditions, 625

Bergh, Ø see Opstad. I

Beveridge, M. Book review: The Trophic Cascade in Lakes,

Beveridge, M. Book review: Baseline Studies of Biodiversity: the Fish Resources of Western Indonesia, 77

Bhattacharyya, B see Basu, T K

Bjerkeng, B. see Hatlen, B.

Black, K D see Heasman, M S

Blanc, F see Saucedo, P

Bolla, S & Ottesen, O H. The influence of salinity on the morphological development of yolk sac larvae of Atlantic halibut, Hippoglossus hippoglossus (L.) 203

Boon, J H see Hariati. A M

Bosworth, B G, Wolters, W R, Wise, D J & Li, M H. Growth, feed conversion, fillet proximate composition and resistance to Edwardsiella tetaluri of channel catflish, letalurus punctatus (Rafinesque), blue catflish, letalurus furcatus (Lesueur), and their reciprocal F1 hybrids fed 25% and 45% protein diets, 251

Breyne, C see Leonard. V

Brzuzan, P, Luczynski, M & Kuzniar, P A. Mitochondrial DNA variation in two samples of northern pike *Esox lucius* L.. 521

Bundit, J see Lorenzen, K

Burford, M A, Peterson, E L, Baiano, J C F & Preston, N P.
Bacteria in shrimp pond sediments: their role in
mineralizing nutrients and some suggested sampling
strategies, 843

Calderon-Perez, J A see Martinez-Cordova, L R

Canario, A V M, Condeça, J, Power, D M & Ingleton, P M. The effect of stocking density on growth in the gilthead sea-bream, Sparus aurata (L.), 177

Carlos, M H see James, C M

Carral, J M see Pérez. J R

Caston, L see Swatland, H J

Cavalli, R O, Peixoto, S M & Wasielesky, W. Performance of Penaeus paulensis (Pérez-Farfante) broodstock under long-term exposure to ammonia. 815

Celada, J D see Pérez, J R

Chen, H-C see Yang, H-S

Child, A R & Laing, I. Comparative low temperature tolerance of small juvenile European, Ostrea edulis L., and Pacific oysters, Crassostrea gigas 103

Condeça, J see Canario, A V M

Costa, J M see Pereira, J O B

Coyle, S D see Tidwell, J H

Crespo, J E see Gajardo, G

Cruz, E M see Ridha, M T

D'Abramo, L R see Tidwell. J H

Daniels, W H see Tidwell, J H

Darkin, F see Swatland, H J Davies, S J see Morris, P C

De Silva, S S see Jones, P L

De Silva, S S, Sheikh-Eldin, M, Ingram, B A & An, H P. Changes in proximate and amino acid composition during early development of two Australian Percichthyid fish, Macquarie perch, Macquaria australasica Cuvier, and trout cod, Maccullochella macquarensis (Cuvier), 459

Dhert, P see Reza, A

Díaz, F, Espina, S, Rodríguez, C & Soto, F. Preferred temperature of grass carp, Ctenopharyngodon idella (Valenciennes), and brema carp. Megalobrama amblycephala (Yih), (Pisces. Cyprinidae) in horizontal and vertical gradients, 643

Díaz, O see Gajardo, G

Dillane, M G see Poole, W R

Divanach, P see Rueda, F M

Dobosz, S see Babiak, I

Domínguez-Cen, L J see Olvera-Novoa, M A

Dong, Z & Zhou, E. Application of the random amplified polymorphic DNA technique in a study of heterosis in common carp, Cyprinus carpio L., 595

Duong, L T see Rothuis, A J

Earl, N H see Laing, I

Edwards, D B see Spencer, B E

Edwards, P see Riley, J

Edwards, P see Smart, T S

Edwards, S J see Gilroy, A

Elberizon, I R & Kelly, L A. Empirical measurements of parameters critical to modelling benthic impacts of freshwater salmonid cage aquaculture, 669

El-Sayed, A-F M. Total replacement of fish meal with animal protein sources in Nile tilapia, *Oreochromis niloticus* (L.), feeds, 275

Endemann, F see Kaiser, H

Erfanullah & Jafri, A K. Evaluation of digestibility coefficients of some carbohydrate-rich feedstuffs for Indian major carp fingerlings, 511

Espina, S see Díaz, F D

Faber, R see Hariati, A M

Fabião, A see Oliveira. J

Fadjar, M see Hariati. A M

Fairclough, R see Kibria. G

Fast, A W see Qin, J G

Felton, H M see Felton, S P

Felton, S.P., Luzzana, U. & Felton, H.M. Vitamin C lost during adaptation to salt water: ascorbic acid and ascorbyl-2sulphate measured in chinook salmon, *Oncorhynchus* tshawytscha (Walbaum), 609

Fraser, K P P, Lyndon, A R & Houlihan, D F. Protein synthesis and growth in juvenile Atlantic halibut, Hippoglossus hippoglossus (L.): application of <sup>15</sup>N stable isotope tracer, 289

Gabrielsen, B O & Austreng E. Growth, product quality and immune status of Atlantic salmon, Salmo salar L., fed wet feed with alginate. 397

Gajardo, G, Díaz, O & Crespo, J E. Allozymic variation and differentiation in naturalized populations of rainbow trout, Oncorhynchus mykiss (Walbaum), from southern Chile, 785

Gangadhar, B see Nandeesha. M C

Ganguly, S see Basu, T K

Gara, B see Mangor-Jensen. A

Gara, B, Shields, R J & McEvoy, L. A sensitive period during first feeding for the determination of pigmentation pattern in Atlantic halibut, *Hippoglossus hippoglossus L.*, juveniles: the role of diet, 935

Garcia, T see Taboada, G

Gaxiola, G see Taboada, G

George, T & Pandian, T J. Dietary administration of androgens induces sterility in the female-heterogametic black molly, *Poecilia sphenops*. (Curvier & Valenciennes, 1846) 167

Ghosal, T K see Kaviraj, A

Gilroy, A & Edwards, S J. Optimum temperature for growth of Australian abalone: preferred temperature and critical thermal maximum for blacklip abalone, Haliotis rubra (Leach) and greenlip abalone. Haliotis laevigata (Leach), 481

Glamuzina, B, Glavić, N, Skaramuca, B & Kožul, V. Induced sex reversal of dusky grouper, Epinephelus marginatus (Lowe), 563

Glamuzina, B, Skaramuca, B, Glavić, N & Kožul, V. Preliminary studies on reproduction and early stages in rearing trials with dusky grouper *Epinephelus marginatus* (Lowe, 1834), 769

Glavić, N see Glamuzina, B

Glogowski, J see Babiak. I

Goryczko, K see Babiak, I

Guo, J Y see Zhao, J H Gurure, R M see Moccia, R D

Harboe, T & Mangor-Jensen, A. The effect of light on activity and growth of Atlantic halibut, Hippoglossus

hippoglossus L., yolk-sac larvae, 913 Harboe, T see Mangor-Jensen, A

Harboe, T see Pittman, K

Harboe, T., Mangor-Jensen, A., Naas, K. E. & Næss, T. Time of first feeding of Atlantic halibut, *Hippoglossus hippoglossus* L., larvae, 919

Hariati, A M, Wiadnya, D G R, Fadjar, M, Muhammad, S, Faber, R, Verdegem, M C J & Boon, J H. The impact of tiger shrimp, *Penaeus monodon* Fabricius postlarvae stocking density on production in traditional tambak systems in East Java, Indonesia, 229

Hariati, A M, Wiadnya, D G R, Rini, R K, Boon, J H & Verdegem, M C J. Penaeus monodon (Fabricius) and Penaeus merguiensis (de Man) biculture in East Java, Indonesia, 743

Harzevili, S see Reza, A

Hatlen, B., Jobling, M & Bjerkeng, B. Relationships between carotenoid concentration and colour of fillets of Arctic charr, Salvelinus alpinus (L.), fed astaxanthin, 191

Heasman, M S & Black, K D. The potential of Arctic charr, Salvelinus alpinus (L.) for mariculture. 67

Heggberget, T.G. see Thorstad, E.B.

Helvik, J V see Karlsen. Ø

Hemre, G I see Juell, J-E

Hennø, J S see Mangor-Jensen, A

Hinojosa-Baltazar, P see Vargas-Albores, F

Holm, J C see Juell. J-E

Houlihan, DF see Fraser, KPP

Ibarra, A M see Palacios, E

Ingleton, P M see Canario, A V M

Ingram, B A see De Silva, S S

Ísaksson, Á see Jóhannsson, V

Jackson, C J & Wang, Y-G. Modelling growth rate of Penaeus monodon Fabricius in intensively managed ponds: effects of temperature, pond age and stocking density. 27 Jafri, A K see Erfanullah

James, C M, Al-Thobaiti, S A, Rasem, B M & Carlos, M H. Growout production of the camouflage grouper, Epinephelus polyphekadion (Bleeker). in a tank culture system, 381

James, P J. Rock lobster, Jasus edwardsii (Hutton), growth on opened versus unopened cultured mussel, Mytilus galloprovincialis (Lamarck), 535

Jelmert, A see Pittman, K

Jobling, M, Koskela, J & Savolainen, R. Influence of dietary fat level and increased adiposity on growth and fat deposition in rainbow trout, Oncorhynchus mykiss (Walbaum), 601

Jobling, M see Hatlen. B

Jóhannsson, V, Jónasson, J, Ósakarsson, S & Ísaksson, Á. The straying of Icelandic ranched Atlantic salmon, Salmo salar L.: release and recapture techniques, 679

Jónasson, J see Jóhannsson, V

Jones, P L & De Silva, S S. Comparison of internal and external markers in digestibility studies involving the Australian freshwater crayfish, Cherax destructor Clark (Decapoda, Parastacidae), 487

Juell, J-E, Holm, J C, Hemre, G I & Lie, Ø. Growth and feeding behaviour of caged Atlantic mackerel Scomber scombrus L., 115

Juntana, J see Lorenzen. K

Kaiser, H. Paulet, T G & Endemann, F. Water quality fluctuations in a closed recirculating system for the intensive culture of the guppy, *Poecilia reticulata* (Peters), 611

Kaiser, M J see Spencer, B E

Karlsen, Ø, Skiftesvik, A B & Helvik, J V. Large-scale rearing of Atlantic halibut, *Hippoglossus hippoglossus* L., yolk sac larvae: effects of flow rate on growth, survival and accumulation of bacteria, 899

Kaur, K see Ansal. M D

Kaviraj, A & Ghosal, T K. Effects of compost manure on the body burden of cadmium and growth of common carp, Cyprinus carpio (L.), 555

Keene, J L, Noakes, D L G, Moccia, R D & Soto, C G. The efficacy of clove oil as an anaesthetic for rainbow trout, Oncorhynchus mykiss (Walbaum), 89

Kelly, L A see Elberizon, I R

Kentouri, M see Rueda, F M

Keshavanath, P see Nandeesha. M C

Kestemont, P see Awaïss. A

Khan, S, Arakawa, O & Onoue, Y. Physiological investigations of a neurotoxin-producing phytoflagellate, Chattonella marina (Raphidophyceae), 9

Kibria, G, Nugegoda, D, Fairclough, R & Lam, P. Effect of temperature on phosphorus losses and phosphorus retention in silver perch, *Bidyanus bidyanus* (Mitchell 1838), (Teraponidae) fed on artificial diets, 259

Kim, K-W see Lee, K-J

Kirubagaran, R see Tiwary, B K

Kožul, V see Glamuzina, B

Kontara, E see Merchie, G

Koskela, J see Jobling, M

Kristiansen, H R. Effects of handling, discrete meals and body weight on the individual variation of gastric emptying parameters, 717 Kucharczyk, D. Kujawa, R. Mamcarz, A. Skrzypczak, A & Wyszomirska, E. Induced spawning in perch, Perca fluviatilis (L.), using FSH+LH with pimozide or metoclopramide, 131

Kujawa, R see Kucharczyk. D

Kurmaly, K see Merchie. G

Kuzminski, H see Babiak, I

Kuzniar, P A see Brzuzan, P

Lahnsteiner, F, Weismann, T & Patzner, R A. An efficient method for cryopreservation of testicular sperm from the Northern pike, Esox lucius L., 341

Laing, I & Earl, N H. The lipid content, spatfall and subsequent growth of early and late settling hatcheryreared Pacific oyster, Crassostrea gigas Thunberg, larvae, 19

Laing, I see Child, A R

Lam, P see Kibria, G

Lam, T J see Zhao, I H

Larondelle, Y see Leonard, V

Lavens, P see Merchie. G

Law, A T see Arulampalam, P

Leatherland, J F see Vandenberg, G W

Lee, K-J, Kim, K-W & Bai, S C. Effects of different dietary levels of t-ascorbic acid on growth and tissue vitamin C concentration in juvenile Korean rockfish, Sebastes schlegeli (Hilgendorf), 237

Leonard, V, Breyne, C, Micha, J-C & Larondelle, Y. Digestibility and transit time of Azolla filliculoides Lamarck in Oreochromis aureus (Steindachner), 159

Li, M H see Bosworth, G B

Lie, Ø see Juell, J-E

Lie, Ø see Næss, T

Lorenzen, K, Juntana, J, Bundit, J & Tourongruang, D. Assessing culture fisheries practices in small waterbodies: a study of village fisheries in north-east Thailand, 211

Luczynski, M see Babiak, I

Luczynski, M see Brzuzan, P

Luzzana, U see Felton, S P

Lyndon, A R see Fraser, K P P

Magallón-Barajas, F see Vargas-Albores, F

Mamcarz, A see Kucharczyk, D

Mangor-Jensen, A see Harboe, T

Mangor-Jensen, A, Harboe, T, Hennø, J S & Troland, R. Atlantic halibut, *Hippoglossus hippoglossus* L. larvae cultivation literature, including a bibliography, 887

Mangor-Jensen, A, Harboe, T, Shields, R J, Gara, B & Naas, K E, Editorial, 857

Marengoni, N G & Onoue, Y. Ultraviolet-induced androgenesis in Nile tilapia, Oreochromis niloticus (L.) and hybrid Nile × blue tilapia, O. aureus (Steindachner), 250

Martinez, F J see Rueda, F M

Martinez-Cordova, L R, Porchas-Cornejo, M A, Villarreal-Colmenares, H & Calderon-Perez, J A. Evaluation of three feeding practices on the winter culture of yellowleg shrimp, Penaeus californiensis (Holmes), in low water exchange ponds, 573

Martinez-Cordova, L. R., Villarreal-Colmenares, H & Porchas-Cornejo, M A. Response of biota to aeration rate in low water exchange ponds farming white shrimp, Penaeus vannamei Boone, 587

Martínez-Palacios, C A see Olvera-Novoa, M A

Martínez-Rodríguez, G, Álvarez, M C & McAndrew, B J. Genetic variability of European sea bass, *Dicentrarchus labrax* L.: data from a hatchery stock, 851

Martin-Robichaud, D J & Peterson, R H. Effects of light intensity, tank colour and photoperiod on swimbladder inflation success in larval striped bass, Morone saxatilis (Walbaum), 539

Matsumoto, S see Ono, K

Mayzaud, P see Roche-Mayzaud, O

McAndrew, B J see Martinez-Rodríguez, G

McCracken, K J see Wheatherup, R N

McEvoy, L see Gara, B

Medda, C see Basu, T K

Merchie, G, Kontara, E, Lavens, P, Robles, R, Kurmaly, K & Sorgeloos, P. Effect of vitamin C and astaxanthin on stress and disease resistance of postlarval tiger shrimp, *Penaeus monodon* (Fabricius), 579

Micha, J-C see Leonard. V

Moccia, R D see Keene, J L

Moccia, R D see Swatland, H J

Moccia, R D see Vandenberg, G W

Moccia, R D, Gurure, R M, Atkinson, J L & Vandenburg, G W. Effects of the repartitioning agent ractopamine on the growth and body composition of rainbow trout, Oncorhynchus mykiss (Walbaum), fed three levels of dietary protein, 687

Moccia, R D see Vandenberg, G W.

Monteforte, M see Saucedo, P

Morris, P C, Baker, R T M & Davies, S J. Nicotinic acid supplementation of diets for the African catfish, Clarias gariepinus (Burchell), 791

Muñoz, C see Pérez. J R

Muhammad, S see Hariati, A M

Naas, K E see Harboe, T

Naas, K E see Mangor-Jensen, A

Næss, T & Lie, Ø. A tank design for first feeding of halibut, Hippoglossus hippoglossus L.. larvae, 925

Næss, T see Harboe, T

Næss, T see Pittman, K

Nakanishi, M see Ono, K

Nam, C Q see Rothuis. A J

Nandeesha, M C, Gangadhar, B, Varghese, T J & Keshavanath, P. Effect of feeding *Spirulina platensis* on the growth, proximate composition and organoleptic quality of common carp. *Cyprinus carpio* L., 305

Naylor, S J see Swatland, H J

Nhan, D K see Rothuis, A J

Noakes, D L G see Keene. J L

Nugegoda, D see Kibria. G

Ogawa, Y see Ono, K

Oka, M see Takemura. A

Økland, F see Thorstad, E B

Oliveira, J & Fabião, A. Growth responses of juvenile red swamp crayfish, Procambarus clarkii Girard, to several diets under controlled conditions, 123

Olivera-Castillo, L see Olvera-Novoa, M A

Ollevier, F see Rothuis, A 1

Olsen, R E & Ringø, E. The influence of temperature on the apparent nutrient and fatty acid digestibility of Arctic char, Salvelinus alpinus L., 695

Olvera-Novoa, M. A., Domínguez-Cen, L. J., Olivera-Castillo, L. & Martínez-Palacios, C. A. Effect of the use of the microalga Spirulina maxima as fish meal replacement in diets for tilapia, Oreochromis mossambicus (Peters), fry. 709

Ono, K, Arakawa, O, Onoue, Y, Matsumoto, S, Shihara, H, Takeda, K, Nakanishi, M, Yamaji, T, Uemura, K & Ogawa, Y. Synthetic surfactants for protecting cultured fish against toxic phytoplankton, 569

Onoue, Y see Khan. S

Onoue, Y see Marengoni, N G

Onoue, Y see Ono, K

Opstad, I, Bergh, Ø & Skiftesvik, A B. Design and operation of Atlantic halibut, Hippoglossus hippoglossus L., egg incubators, 893

Ósakarsson, S see Jóhannsson. V

Ottesen, O H see Bolla, S

Palacios, E, Ibarra, A M, Ramirez, J L, Portillo, G & Racotta, I S. Biochemical composition of eggs and nauplii in White Pacific Shrimp, *Penaeus vannamei* (Boone), in relation to the physiological condition of spawners in a commercial hatchery, 183

Pandian, Thavamani J. see George, Thomas

Patzner, R A see Lahnsteiner, F

Paulet, T G see Kaiser, H

Pedroza, R see Taboada, G Peixoto, S M see Cavalli, R O

Pereira, J O B, Reis-Henriques, M A, Sanchez, J L & Costa, J M. Effect of protein source on the reproductive performance of female rainbow trout, *Oncorhynchus mukiss* (Walbaum), 751

Pérez, J R, Carral, J M, Celada, J D, Muñoz, C, Sáez-Royuela, M & Antolín, J I. Effects of stripping time on the success of the artificial incubation of white-clawed crayfish, Austropotamobius pallipes (Lereboullet), eggs. 389

Peterson, E L see Burford, M A

Peterson, R H see Martin-Robichaud, D J

Pittman, K. Jelmert, A., Næss, T., Harboe, T & Watanabe, K. Feeding strategies to achieve correct metamorphosis of Atlantic halibut, *Hippoglossus hippoglossus* L., using enriched Artenia, 949

Poole, W R & Dillane, M G. Estimation of sperm concentration of wild and reconditioned brown trout, Salmo trutta L., 439

Porchas-Cornejo, M A see Martinez-Cordova, L R

Portillo, G see Palacios, E

Portillo-Clark, G see Vargas-Albores. F

Power, D M see Canario, A V M

Preston, N P see Burford. M A

Qin, J G & Fast, A W. Effects of temperature, size and density on culture performance of snakehead, Channa striatus (Bloch), fed formulated feed, 299

Racotta, I S see Palacios. E

Ramirez, J L see Palacios. E

Rasem, B M see James, C M

Ray, A K see Saha, A K

Ray, A K see Tiwary, B K

Reis-Henriques, M A see Pereira, I O B

Richter, C J J see Rothuis. A J

Ridha, M T, Cruz, E M, Al-Ameeri, A A & Al-Ahmed, A A. Effects of controlling temperature and light duration on seed production in the tilapia *Oreochromis spilurus* (Günther), 403

Riley, J & Edwards, P. Statistical aspects of aquaculture research: pond variability and pseudoreplication, 281

Riley, J see Smart, T S

Ringø, E see Olsen, R E

Rini, R K see Hariati, A M

Robles, R see Merchie, G

Roche-Mayzaud, O, Mayzaud, P & Audet, C. Changes in lipid classes and trypsin activity during the early development of brook charr, Salvelinus fontinalis (Mitchill), fry. 137

Rodríguez, C R see Díaz, F D

Rosas, C see Taboada, G

Rothuis, A J, Duong, L T, Richter, C J J & Ollevier, F. Polyculture of silver barb, *Puntius gonionotus* (Bleeker), Nile tilapia, *Oreochromis niloticus* (L.), and common carp, *Cyprinus carpio* L. in Vietnamese ricefields: feeding ecology and impact on rice and ricefield environment, 649

Rothuis, A J, Nam, C Q, Richter, C J J & Ollevier, F. Polyculture of silver barb, Puntius gonionotus (Bleeker), Nile tilapia, Oreochromis niloticus (L.), and common carp, Cyprinus Carpio L. in Vietnamese ricefields: fish production parameters, 661

Rothuis, A J, Nhan, D K, Richter, C J J & Ollevier, F. Rice with fish culture in the semi-deep waters of the Mekong Delta, Vietnam: a socio-economical survey, 47

Rothuis, A J, Nhan, D K, Richter, C J J & Ollevier, F. Rice with fish culture in the semi-deep waters of the Mekong Delta. Vietnam: interaction of rice culture and fish husbandry management on fish production, 59

Rueda, F M, Martinez, F J, Zamora, S, Kentouri, M & Divanach, P. Effect of fastening and refeeding on growth and body composition of red porgy, *Pagrus pagrus L.*, 447

Sáez-Royuela, M see Pérez. J R

Saha, A K & Ray, A K. Evaluation of Chuni. a commercially available low-cost cattle fodder, in the diet for rohu, Labeo rohita (Hamilton), fingerlings, 761

Sanchez, A see Taboada, G

Sanchez, J L see Pereira, J O B

Santos, E A see Schmitt, A S C

Sarkar, S K see Basu, T K

Saucedo, P, Monteforte, M & Blanc, F. Changes in shell dimensions of pearl oysters, *Pinctada mazatlanica* (Hanley 1856) and *Pteria sterna* (Gould 1851), during growth as criteria for Mabé pearl implants, 801

Savolainen, R see Jobling, M

Schmitt, A S C & Santos, E A. Ammonia-N efflux rate and nutritional state of juvenile pink shrimp *Penaeus paulensis* (Perez-Farfante) in relation to food type, 495

Seki, S see Siraj, S S

Shariff, M see Arulampalam. P

Sheikh-Eldin, M see De Silva, S S

Shields, R J see Gara, B

Shields, R J see Mangor-Jensen. A

Shihara, H see Ono, K

Shiri Harzevili, A R, Van Duffel, H, Dhert, Ph, Swings, J & Sorgeloos, P. Use of a potential probiotic *Lactococcus lactis* AR21 strain for the enhancement of growth of the rotifer *Brachionus plicatilis* (Müller), 411

Siddiqui, A Q see Al-Hafedh, Y S

Siddiqui, A Q, Al-Hafedh, Y S & Ali, S A. Effect of dietary protein level on reproductive performance of Nile tilapia, Oreochromis niloticus (L.), 349

Siraj, S S, Seki, S & Taniguchi, N. DNA fingerprinting in Malaysian strain of Javanese carp, *Puntius gonlonotus* (Bleeker), detected by YNZ22 DNA probe, 453

Skaramuca, B see Glamuzina. B

Skaramuca, B see Glamuzina. B

Skiftesvik, A B see Karlsen. Ø

Skiftesvik, A B see Opstad, 1

Skrzypczak, A see Kucharczyk. D

Smart, T S, Riley, J & Edwards, P. Statistical aspects of aquaculture research: one- and two-season cross-over designs, 153

Smart, T S, Riley, J & Edwards, P. Statistical aspects of aquaculture research: sample sizes for pond experiments, 373

Sorgeloos, P see Merchie, G

Sorgeloos, P see Reza, A

Soto, C G see Keene, J L

Soto, L A see Taboada, G
Spencer, B E, Kaiser, M J & Edwards, D B. Intertidal clam harvesting: benthic community change and recovery, 429

Srinivasa Rao, P S see Arulampalam, P

Swatland, H J, Darkin, F, Naylor, S J, Caston, L & Moccia, R D. Muscle colour development in Arctic charr, Salvelinus alpinus (L.), monitored by fibre-optics and electrical impedence, 367

Swings, J see Reza, A

Taboada, G, Gaxiola, G, Garcia, T, Pedroza, R, Sanchez, A, Soto, L A & Rosas, C. Oxygen consumption and ammonia-N excretion related to protein requirements for growth of white shrimp, *Penaeus setiferus* (L.), juveniles, 823

Takeda, K see Ono, K

Takemura, A & Oka, M. Immunochemical sexing of living yellowfin tuna, *Thunnus albacares* (Bonnaterre), using vitellogenin-like protein. 245

Taniguchi, N see Siraj, S S

Thomas, R G see Wayman. W R

Thorstad, E B, Heggberget, T G & Økland, F. Migratory behaviour of adult wild and escaped farmed Atlantic salmon, Salmo salar L., before, during and after spawning in a Norwegian river, 419

Tidwell, J H, Webster, C D, Coyle, S D, Daniels, W H & D'Abramo, L R. Fatty acid and amino acid composition of eggs, muscle and midgut glands of freshwater prawns Macrobrachium rosenbergii (de Man) raised in fertilized ponds, unfertilized ponds or fed prepared diets. 37

Tiersch, T R see Wayman. W R

Ting, Y-Y see Yang, H-S

Tiwary, B K, Kirubagaran, R & Ray, A K. Testosteronemediated complete feminization with precocious ovarian maturation in catfish, *Heteropneustes fossilis* (Bloch), 333

Tourongruang, D see Lorenzen, K Troland, R see Mangor-Jensen, A

Uemura, K see Ono, K

van Dam, A A see Van Der Meer, M B

van der Meer, M B & van Dam, A A. Modelling growth of Colossoma macropomum (Cuvier): comparison of an empirical and an explanatory model, 313

Van Duffel, H see Reza, A

Vandenberg, G W & Moccia, R D. Growth performance and carcass composition of rainbow trout, *Oncorhynchus mykiss* (Walbaum), fed the β-agonist ractopamine, 469

Vandenberg, G W, Leatherland, J F & Moccia, R D. The effects of the beta-agonist ractopamine on growth hormone and intermediary metabolite concentrations in rainbow trout, Oncorrhynchus mykiss (Walbaum), 79

Vandenburg, G W see Moccia, R D

Vargas-Albores, F, Hinojosa-Baltazar, P, Portillo-Clark, G & Magallón-Barajas, F. Influence of temperature and salinity on the yellowleg shrimp, *Penaeus californiensis* Holmes, prophenoloxidase system, 549

Varghese, T J see Nandeesha, M C Verdegem, M C J see Hariati, A M

Villarreal-Colmenares, H see Martinez-Cordova, L R

Wang, Y-G see Jackson, C J Wasielesky, W see Cavalli, R O Watanabe, K see Pittman, K

Wayman, W R, Tiersch, T R & Thomas, R G. Refrigerated storage and cryopreservation of sperm of red drum, Sciaenous ocellatus L., 267

Webster, C D see Tidwell. J H

Weismann, T see Lahnsteiner, F

Wheatherup, R N & McCracken, K J. Comparison of estimates of digestibility of two diets for rainbow trout *Oncorhynchus mykiss* (Walbaum) using two markers and two methods of faeces collection, 527

Wiadnya, D G R see Hariati. A M

Wiedemeyer, W.L. Contributions to the larval biology of the red lipped conch, *Strombus luhuanus* L. 1758, with respect to seed production for mariculture, 1

Wise, D J see Bosworth, G B Wolters, W R see Bosworth, G B

Yamaji, T see Ono, K

Yang, H-S, Ting, Y-Y & Chen, H-C. Blocking polar body with cytochalasin B in the fertilized eggs of the small abalone, Haliotis diversicolor supertexta (Lischke), and development and ploidy of the resultant embryos, 775 Yusoff, F M see Arulampalam. P

Zamora, S see Rueda, F M

Zhao, J H, Guo, J Y & Lam, T J. Lethal doses of ammonia on the late-stage larvae of Chinese mitten-handed crab, Eriocheir sinensis (H. Milne-Edwards), (Decapoda: Grapsidae) reared in the laboratory, 635

Zhou, E see Dong, Z

## **Subject Index**

Bream, gilthead sea, stocking density and growth, 177 Abalone Australian blacklip, temperature preferences, 481 Australian greenlip, temperature preferences, 481 Cadmium, body burden, common carp, 555 small, cytochalasin B, blocking polar body, 775 Cage culture Aeration rate, biota response, 587 salmonid, modelling benthic impacts, 669 Alginate, wet feed, Atlantic salmon, 397 water quality, bacterial counts, 617 Amino acid profiles Carotenoid concentration, flesh colour, Arctic charr, 191, 367 Australian Percichthyid fish, early development, 459 diet, prawn, 37 brema, preferred temperature, 643 Ammonia excretion common diet, pink shrimp, 495 cadmium body burden, 555 protein requirement, white shrimp, 823 heterosis, 595 Ammonia toxicity polyculture in Vietnamese ricefields, 649, 661 Chinese mitten-handed crab, 635 Spirulina platensis diet. 305 pink shrimp broodstock, 815 grass, preferred temperature, 643 Anaesthetic, clove oil, rainbow trout, 89 Indian major Androgenesis, UV-induced, tilapia, 359 Chuni in diet. 761 digestibility coefficients of feedstuffs, 511 induced sex reversal, dusky grouper, 563 growth, T3 feeding, 835 induction of sterility, black molly, 167 length growth modelling, 625 precocious ovarian maturation, catfish, 333 Javanese, DNA fingerprinting, 453 Artemia, diet, in Atlantic halibut metamorphosis, 935 Catfish Ascorbic acid see Vitamin C African Astaxanthin characteristics of larvae, diet, 731 carotenoid concentration, fillet colour, Arctic charr, 191 nicotinic acid supplementation of diets, 791 stress and disease resistance, tiger shrimp, 579 blue, resistance to E. ictaluri, diet, 251 channel, resistance to E. ictaluri, diet, 251 early development of Percichthyid fish, 459 hybridization, growth and feed conversion, 251 temperature preferences of abalone, 481 hybridization, resistance to E. ictaluri. 251 Austropotamobius pallipes (Lereboullet) see Crayfish, white-Indian, precocious ovarian maturation, 333 Catla catla (Hamilton) see Carp, Indian major Autoregressive technique, length growth modelling, Indian Cattle fodder (Chuni). diet, Indian major carp. 761 major carp, 625 Channa striatus (Bloch) see Snakehead Azolla filiculoides. digestibility and transit time in tilapia, Charr Arctic carotenoid concentration, fillet colour, 191, 367 muscle colour development, 367 Bacteria populations, water quality, cage culture, 617 potential for mariculture, 67 rearing of Atlantic halibut, flow rate, 893 temperature, lipid digestion, 695 brook, development, lipid classes and trypsin activity, 137 in shrimp pond sediments, 843 Chattonella marina, neurotoxin-producing, physiological Barb, silver, polyculture in Vietnamese ricefields, 649, 661 investigations. 9 sea, genetic variability, 851 Cherax destructor (Clark) see Crayfish, Australian striped, swimbladder inflation, tank colour and freshwater photoperiod, 539 Chile, allozymic variation, rainbow trout, 785 Benthic community changes Chuni, diet. Indian major carp. 761 intertidal harvesting, clam, 429 Cirrhinus mrigala (Hamilton) see Carp, Indian major modelling, freshwater salmonid cage aquaculture, 669 Clam, Manila, intertidal harvesting, benthic community Biculture, shrimp, Indonesia, 743 changes, 429 Bidyanus bidyanus (Mitchell 1838) see Perch, silver Clarias gariepinus (Burchell) see Catfish. African Biochemical composition, egg and nauplii variables, shrimp Clove oil, as anaesthetic, rainbow trout, 89 spawner condition, 183 Colossoma macropomum (Cuvier) see Tambaqui Biota, response to aeration rate, 587 Colour Body composition carotenoid concentration, Arctic charr, 191, 367 ascorbic acid, in Nile tilapia diets, 503 development in Arctic charr, 367 fasting and refeeding, red porgy, 447 tank, swimbladder inflation, striped bass, 539 hybridization of channel and blue catfish, diet, 251 Compost manure, cadmium body burden, common carp, 555 Conch, red-lipped, larval biology and seed production, 1 ractopamine effects, rainbow trout, 469, 687 Body weight, gastric emptying parameters, 717 Crab, Chinese mitten-handed, ammonia toxicity, 635

Brachionus calyciflorus see Rotifer

Brachionus plicatilis (Müller) see Rotifer

Crassostrea gigas (Thunberg) see Oyster, Pacific

Crayfish

Australian freshwater, digestibility markers, 487 red swamp, growth response to diet, 123 white-clawed, artificial incubation of eggs, 389 Cross-over study designs, statistical aspects, 153 Cryopreservation, sperm Northern pike, 341 rainbow trout, 337 red drum, 267 Ctenopharyngodon idella (Valenciennes) see Carp, grass Culture methods feeding practices, yellowleg shrimp, 573 intensive, water quality, guppy, 611 mariculture, potential of Arctic charr, 67 rice-fish fish husbandry management and production, 59 polyculture, 649, 661 socio-economic aspects, 47 shrimp biculture, Indonesia, 743 tank design, first feeding, Atlantic halibut, 919 village fisheries in small waterbodies, Thailand, 211 Cyprinus carpio L. see Carp. common Cytochalasin B, blocking polar body, small abalone eggs, 775 Dicentrarchus labrax L. see Bass. sea Diet

African catfish characteristics, 731 nicotinic acid supplementation, 791 alginate, Atlantic salmon, 397 amino acid profiles, prawn, 37 ammonia-N efflux rate, pink shrimp, 495 ascorbic acid, Nile tilapia, 503 Atlantic halibut metamorphosis, 935 pigmentation pattern, 925 Atlantic salmon, wet alginate feed, 397 catfish, resistance to E. ictaluri, 251 Chuni. Indian major carp. 761 common carp polyculture in Vietnamese ricefields, 649 Spirulina platensis, 305 crayfish, digestibility markers, 487 discrete meals, gastric emptying parameters, 717 formulated, snakehead culture, 299 growth response, red swamp crayfish, 123 guar seed as protein source, Nile tilapia, 703 Indian major carp Chuni, 761 digestibility coefficients, 511 T3 feeding, 835 Korean rockfish, vitamin C supplementation, 237 microalgal fish meal replacement, tilapia, 709 nicotinic acid supplementation, African catfish, 791

animal protein sources, 275
ascorbic acid, 503
guar seed as protein source, 703
polyculture, Vietnamese ricefields, 649
protein level, reproductive performance, 349
prawn, amino acid/fatty acid profiles, 37
protein
animal sources, for Nile tilapia, 275

animal sources, for Nile tilapia, 275
catfish resistance to *E. ictaluri*, 251
level, reproductive performance, Nile tilapia, 349
ractopamine effects, rainbow trout, 469, 687
requirement, white shrimp, 823
source, reproduction, rainbow trout, 751
rainbow trout
digestibility markers, 527

fat level and growth 601 protein source, reproduction, 751 ractopamine effects, 469, 687 red swamp crayfish, growth response, 123 salmonid, modelling benthic impacts, 669 shrimn pink, ammonia-N efflux rate, 495 white, protein requirement, 823 silver barb, polyculture in Vietnamese ricefields, 649 snakehead, formulated feed, 299 Spirulina platensis, common carp. 305 T<sub>3</sub> feeding, Indian major carp, 835 tilapia digestibility of Azolla filiculoides, 159 microalgal fish meal replacement, 709, 709 vitamin C supplementation, Korean rockfish, 237 Digestibility Azolla filiculoides, tilapia, 159 coefficients, feedstuffs for Indian major carp, 511 lipids, in Arctic charr, 695 markers freshwater crayfish, 487 rainbow trout, 527 Disease resistance, vitamin C and astaxanthin in tiger

shrimp, 579
DNA
fingerprinting, Javanese carp, 453
mitochondrial variation, Northern pike, 521
RAPD analysis, heterosis in common carp, 595
Drum, red, cryopreservation of sperm, 267

Economic aspects rice-fish culture in Vietnam, 47 T<sub>3</sub> feeding, major carp growth, 835 Edwardsiella ictaluri, resistance of channel and blue catfish, 251 Eggs artificial incubation, white-clawed crayfish, 389 biochemical variables, shrimp spawner conditions, 183 blocking polar body, small abalone, 775 incubators, Atlantic halibut, 887 Electrical impedance, muscle colour development, Arctic charr, 367 Epinephelus marginatus (Lowe) see Grouper, dusky Epinephelus polyphekadion (Bleeker) see Grouper, camouflage Eriocheir sinensis (H. Milne-Edwards) see Crab, Chinese mitten-handed Esox lucius L. see Pike, Northern

Fasting, growth and body composition, red porgy, 447
Fat, dietary level, growth in rainbow trout, 601
Fatty acids
digestibility in Arctic charr, 695
profiles, prawn, diet, 37
Feed conversion, hybridization of channel and blue catfish, diet, 251
Feeding
behaviour, growth of Atlantic mackerel, 115
discrete meals, gastric emptying parameters, 717
fasting and refeeding, red porgy, 447
first, Atlantic halibut, 913, 919, 919, 925
practices, shrimp culture, 573
sequences, African catfish larvae, 731
strategies, Atlantic halibut metamorphosis, 935

sequences, African catfish larvae, 731 strategies, Atlantic halibut metamorphosis, 935 Fertilization, potency of rainbow trout, 337 Fibre-optics, muscle colour development, Arctic charr, 367 Fillet see Body composition, Colour

Nile tilapia

Flesh composition see Body composition Flow rate, large-scale rearing, Atlantic halibut, 893 Follicle stimulating hormone (FSH), induced spawning, perch, 131

Gastric emptying parameters, salmonids, 717 Genetic differences

allozymic variation, rainbow trout, 785 RAPD analysis, heterosis in common carp, 595 restriction analysis, Northern pike, 521 starch gel electrophoresis, sea bass, 851

Grouper

camouflage, growout production, 381

dusky

rearing trials, 769 sex reversal, 563

Growth

Atlantic halibut effect of light, 899

efficiency, 289 flow rate, 893

Atlantic mackerel, feeding behaviour, 115 Atlantic salmon, wet alginate feed, 397 Australian abalone, temperature preferences, 481 cadmium body burden, common carp, 555 camouflage grouper, growout production, 381 common carp

cadmium body burden, 555 Spirulina platensis diet. 305

Atlantic salmon, 397 common carp, 305 hybridization of channel and blue catfish, 251 rainbow trout, 469, 601, 687 red swamp crayfish, 123

rock lobster, 535 gilthead sea-bream, stocking density, 177 hybridization of channel and blue catfish, diet, 251 Indian major carp, T<sub>3</sub> feeding, 835 pearl oysters, shell dimensions, implants, 801

probiotic, rotifer, 411

rainbow trout

dietary fat level, 601 ractopamine effects, 469, 687

red porgy, fasting and refeeding, 447 rock lobster, mussel diets, 535 rotifer, potential probiotic, 411

tambaqui, modelling, 313

Growth hormone, effects of ractopamine, rainbow trout, 79 Growth models

autoregressive technique, 625 Indian major carp, 625 shrimp, 27

tambaqui, 313 Growth response, red swamp crayfish, diet, 123 Guar seed, protein source, Nile tilapia, 703 Guppy, intensive culture, water quality, 611

Halibut, Atlantic

egg incubators, design and operation, 887 feeding strategies, metamorphosis, 935 first feeding pigmentation pattern, diet, 925 tank design, 919

timing, 913 flow rate, large-scale rearing, 893

larvae cultivation: review, 857 light, effects on growth and activity, 899

plasticity of postmetamorphic forms, 949 protein synthesis and growth efficiency, 289 salinity, larval development, 203 Haliotis diversicolor supertexta (Lischke) see Abalone, small Haliotis laevigata (Leach) see Abalone, greenlip Haliotis rubra (Leach) see Abalone, blacklip Handling, gastric emptying parameters, 717 Heteropneustes fossilis (Bloch) see Catfish, Indian Heterosis, RAPD analysis, common carp, 595

Iceland, straying of ranched salmon, 679 Ictalurus furcatus (Lesueur) see Catfish, blue Ictalurus punctatus (Rafinesque) see Catfish, channel Immune status, Atlantic salmon, wet alginate feed, 397 Immunochemistry, sexing of yellowfin tuna, 245 Incubation, artificial, white-clawed crayfish eggs, 389 Incubators, Atlantic halibut eggs, 887 Indonesia

Hippoglossus hippoglossus L. see Halibut, Atlantic

extensive shrimp production, stocking density, 229 shrimp, biculture, 743

Induced spawning, FSH+LH with pimozide or metoclopramide, perch, 131

Intertidal harvesting, benthic community changes, clam, 429 Isotope tracer, protein synthesis in Atlantic halibut, 289

Jasus edwardsii (Hutton) see Lobster, rock

Korea see Rockfish, Korean

Labeo rohita (Hamilton) see Carp. Indian major Lactococcus lactis AR21, potential probiotic, rotifer growth, 411

Larvae

Atlantic halibut cultivation: review, 857

influence of salinity, 203 biology, Strombus luhuanus, seed production, 1 settlement, Pacific oyster spatfall, 19

duration, seed production, tilapia, 403 effects on growth, Atlantic halibut, 899 intensity, swimbladder inflation, striped bass, 539

content, Pacific oyster spatfall, 19 digestibility in Arctic charr, 695 profiles, development of brook charr fry, 137 Lobster, rock, growth on mussel diets, 535 Luteinizing hormone (LH), induced spawning, perch, 131

Maccullochella macquarensis (Cuvier) see Trout cod Machrobrachium rosenbergii (de Man) see Prawn, giant Mackerel, Atlantic, growth and feeding behaviour, 115 Macquaria australasica (Cuvier) see Perch, Macquarie Management, interaction of rice culture and fish husbandry,

Megalobrama amblycephala (Yih) see Carp, brema Metamorphosis, feeding strategies, Atlantic halibut, 935 Metoclopramide, induced spawning, perch, 131 Microalga, fish meal replacement, tilapia, 709 Migratory behaviour, Atlantic salmon, 419 Models

benthic impacts, freshwater salmonid cage aquaculture,

see also Growth models

Molly, black, androgen-induced sterility, 167 Morone saxatilis (Walbaum) see Bass, striped Mussel, in rock lobster diets, 535 Mytilus galloprovincialis (Lamarck) see Mussel

Nauplii, biochemical variables, shrimp spawner conditions, 183

Neurotoxins, Chattonella marina, physiological investigations, 9

Nicotinic acid, supplementation, African catfish, 791 Nitrogen efflux rates, pink shrimp, diet, 495

Norway, migratory behaviour of Atlantic salmon, 419

Onchorhynchus mykiss (Walbaum) see Trout, rainbow Onchorhynchus tshawytscha (Walbaum) see Salmon, chinook

Oreochromis aureus (Steindachner) see Tilapia, blue Oreochromis mossambicus (Peters) see Tilapia Oreochromis niloticus L. see Tilapia, Nile Oreochromis spilurus (Günther) see Tilapia Ostrea edulis L. see Oyster, European

Oxygen consumption, protein requirement, white shrimp, 823
Oyster

European, low temperature tolerance, 103
Pacific

low temperature tolerance, 103 spatfall, 19

pearl, shell dimensions, pearl implants, 801

Pagrus pagrus L. see Porgy, red
Pearl implants, shell dimensions of oysters., 801
Penaeus californiensis (Holmes) see Shrimp, yellowleg
Penaeus merguiensis (de Man) see Shrimp, tiger
Penaeus monodon (Fabricius) see Shrimp, tiger
Penaeus paulensis (Perez-Farfante) see Shrimp, pink
Penaeus setiferus L. see Shrimp, white
Penaeus vannamei (Boone) see Shrimp, white
Perca fluviatilis L. see Perch, Eurasian
Perch

Eurasian, induced spawning, 131
Macquarie, amino acids in early development, 459
silver, temperature, phosphorus retention, 259
Percichthyid fish, Australian, early development, 459

Percichthyid fish, Australian, early development, 459 Phosphorus, retention in silver perch, temperature, 259 Photoperiod, swimbladder inflation, striped bass, 539 Physiological investigations, neurotoxin-producing

Chattonella marina, 9
Phytoflagellates, physiological investigations, Chattonella marina, 9

Phytoplankton, toxic, protective surfactants, 569 Pigmentation pattern, diet, Atlantic halibut, 925 Pike, Northern

cryopreservation of sperm, 341 mtDNA variation, 521

Pimozide, induced spawning, perch, 131 Pinctada mazatianica (Hanley 1856) see Oyster, pearl Plasticity, morphology of Atlantic halibut, 949

Poecilia reticulata (Peters) see Guppy

Poecilia sphenops (Cuvier & Valenciennes, 1846) see Molly, black

Polar body, blocking, small abalone eggs, 775 Polyculture, in Vietnamese ricefields, 649, 661 Pond age, shrimp, modelling growth rate, 27 Pond variability, statistical aspects, 281

Porgy, red fasting and refeeding, 447

growth and body composition, 447
Potency, fertilization ability, rainbow trout, 337

Prawn, giant, amino acid/fatty acid profiles, diet, 37 Probiotic, rotifer growth, 411 Procambarus clarkii (Girard) see Crayfish, red swamp Production

interaction of rice culture and fish husbandry, 59 parameters, polyculture in Vietnamese ricefields, 661 Prophenoloxidase system, yellowleg shrimp, 549

animal sources, Nile tilapia, 275 dietary effects in rainbow trout, 687

dietary, reproductory performance, Nile tilapia, 349 guar seed, Nile tilapia, 703

requirement, white shrimp, 823 source, reproduction, rainbow trout, 751

synthesis, Atlantic halibut, 289
Pseudoreplication, statistical aspects, 281

Pteria sterna (Gould 1851) see Oyster, pearl Puntius gonionotus (Bleeker) see Barb, silver Puntius gonionotus (Bleeker) see Carp, Javanese

Ractopamine

dietary protein effects in rainbow trout, 687 effects on growth hormone in rainbow trout, 79 growth performance/carcass composition, rainbow trout, 469

Random amplified polymorphic DNA analysis (RAPD), heterosis in common carp, 595

Raphidophyceae, physiological investigations of Chattonella marina, 9

Red drum see Drum, red

Refeeding, growth and body composition, red porgy, 447

Reproductive performance protein source, rainbow trout, 75

protein source, rainbow trout, 751 rearing trials, dusky grouper, 769

Restriction analysis, mtDNA variation, Northern pike, 521 Rice-fish culture, Vietnam

fish husbandry management and production, 59 polyculture, 649, 661

socio-economic aspects, 47

Rockfish, Korean, vitamin C supplementation, 237

Rohu see Carp, Indian major

Rotifer

in diet of African catfish, 731 growth, potential probiotic, 411

Salinity

adaptation, vitamin C loss by salmon, 609 development of Atlantic halibut larvae, 203 prophenoloxidase system, yellowleg shrimp, 549 Salmon

Atlantic

migratory behaviour, 419 straying and recapture, 679 wet alginate feed, 397

chinook, vitamin C loss, adaptation to salt water, 609 Salmonids, modelling benthic impacts, cage culture, 669

Salmo salar L. see Salmon, Atlantic Salmo trutta L. see Trout, brown

Salvelinus alpinus L. see Charr, Arctic Salvelinus fontinalis (Mitchill) see Charr, brook

Sample sizes, pond experiments, 373

Sampling strategies, bacteria in shrimp pond sediments, 843

Sciaenops ocellatus L. see Drum, red Scomber scombrus L. see Mackerel, Atlantic Sea-bream see Bream, gilthead sea

Sebastes schlegeli (Hilgendorf) see Rockfish, Korean Seed production

larval biology, Strombus luhuanus. 1 temperature and light duration, tilapia, 403 Sexing, immunochemical, yellowfin tuna, 245

Sex reversal, dusky grouper, 563 grass carp, 643 Shrimp prophenoloxidase system, yellowleg shrimp, 549 Indonesia seed production, tilapia, 403 biculture, 743 tolerance, oysters, 103 tocking density, 229 Testosterone see Androgens Pacific, egg and nauplii biochemical variables, spawner Thailand, culture fisheries, small waterbodies, 211 conditions, 183 Thunnus albacares (Bonnaterre) see Tuna, yellowfin Tilania ammonia-N efflux rate, 495 blue, ultraviolet-induced androgenesis, 359 effect of ammonia on broodstock, 815 digestibility of Azolla filiculoides, 159 fish meal replacement, 709 bacteria in pond sediments, 843 hybrid Nile/blue, ultraviolet-induced androgenesis, 359 biculture in Indonesia, 743 Nile modelling growth rate, 27 animal protein sources in feeds, 275 stocking density, 229 ascorbic acid in diets, 503 vitamin C and astaxanthin, 579 dietary protein, reproductive performance, 349 white guar seed as protein source, 703 biota response to aeration rate, 587 polyculture in Vietnamese ricefields, 649 protein requirements, 823 seed production, temperature and light duration, 403 yellowleg ultraviolet-induced androgenesis, 359 feeding practices, 573 Toxicity prophenoloxidase system, temperature and salinity, 549 ammonia, Chinese mitten-handed crab, 635 Snakehead, culture with formulated feed, 299 Chattonella marinar, physiological investigations, 9 Socio-economic factors, rice-fish culture in Vietnam, 47 phytoplankton, protective surfactants, 569 Sparus auratar L. see Bream, gilthead sea 3,5,3'-Triiodothyronine (T3) feeding, Indian major carp Spatfall, Pacific oyster, 19 growth, 835 Spawning Trout induced see Induced spawning brown migratory behaviour of Atlantic salmon, 419 gastric emptying parameters, 717 sperm concentration, 439 concentration, brown trout, 439 rainbow cryopreservation, red drum, 267 allozymic variation in Chile, 785 Northern pike, cryopreservation, 341 clove oil anaesthetic, 89 Spirulina maxima, as fish meal replacement, tilapia, 709 dietary fat and growth, 601 Spirulina platensis, diet, common carp, 305 digestibility markers, 527 Starch gel electrophoresis, genetic variability, sea bass, 851 gastric emptying parameters, 717 potency and fertilization, 337 Statistical aspects autoregressive technique, 625 protein source and reproduction, 751 gastric emptying parameters, salmonids, 717 ractopamine, dietary protein effects, 687 length growth modelling, Indian major carp, 625 ractopamine, growth performance and composition, 469 modelling growth, tambaqui, 313 ractopamine, growth hormone and metabolites, 79 one and two season cross-over designs, 153 Trout cod, amino acids in early development, 459 pond variability and pseudoreplication, 281 Trypsin activity, in development of brook charr fry, 137 sample sizes, pond experiments, 373 Tuna, yellowfin, immunochemical sexing, 245 Sterility, androgen-induced, in black molly, 167 Stocking density Ultraviolet-induced androgenesis, in tilapia, 359 extensive shrimp production, Indonesia, 229 formulated feed, snakehead culture, 299 Vibrio spp., bacterial populations, water quality, 617 growout production, camouflage grouper, 381 growth, gilthead sea-bream, 177 modelling growth rate, shrimp, 27 Straying, Icelandic ranched salmon, 679 interaction of rice culture and fish husbandry management, Stress, vitamin C and astaxanthin, tiger shrimp, 579 Strombus luhuanus L. 1758 see Conch, red-lipped polyculture in ricefields, 649, 661 Surfactants, against toxic phytoplankton, 569 socio-economic aspects, rice-fish culture, 47 Swimbladder inflation, tank colour and photoperiod, striped bass, 539 ascorbic acid in diets, Nile tilapia, 503 salt water adaptation, chinook salmon, 609 stress and disease resistance, tiger shrimp, 579 Tambaqui, modelling growth, 313 supplementation in Korean rockfish, 237 Tank design, first feeding, Atlantic halibut, 919 Vitellogenin-like protein, immunochemical sexing, Tapes philippinarum (Adams & Reeve) see Clam, Manila yellowfin tuna, 245 Temperature formulated feed, snakehead culture, 299

Water quality

bacterial counts, cage culture, 617

intensive culture, guppy, 611

feeding practices, shrimp culture, 573

Winter culture, feeding practices, shrimp, 573

lipid digestion, Arctic charr, 695

Australian abalone, 481

brema carp, 643

preferences

modelling growth rate, shrimp, 27

phosphorus retention, silver perch, 259



